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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

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**FORM S-8  
REGISTRATION STATEMENT**  
*Under  
The Securities Act of 1933*

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**FREQUENCY THERAPEUTICS, INC.**  
(Exact name of registrant as specified in its charter)

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**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**47-2324450**  
(IRS Employer  
Identification No.)

**19 Presidential Way, 2nd Floor  
Woburn, MA 01801**  
(Address of principal executive offices) (Zip code)

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**Frequency Therapeutics, Inc. 2014 Stock Incentive Plan, as amended  
Frequency Therapeutics, Inc. 2019 Incentive Award Plan  
Frequency Therapeutics, Inc. 2019 Employee Stock Purchase Plan**  
(Full title of the plans)

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**David L. Lucchino**  
**President and Chief Executive Officer**  
**Frequency Therapeutics, Inc.**  
**19 Presidential Way, 2nd Floor**  
**Woburn, MA 01801**  
(Name and address of agent for service)

**(866) 389-1970**  
(Telephone number, including area code, of agent for service)

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*Copy to:*  
**John Chory, Esq.**  
**Nathan Ajiashvili, Esq.**  
**Latham & Watkins LLP**  
**200 Clarendon Street, 27th Floor**  
**Boston, MA 02116**  
**(617) 948-6000**

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Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company," and (emerging growth company) in Rule 12b-2 of the Exchange Act.

Large accelerated filer   
Non-accelerated filer

Accelerated filer   
Smaller reporting company   
Emerging growth company

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If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

**CALCULATION OF REGISTRATION FEE**

<b>Title of Securities to be Registered</b>	<b>Amount to be Registered(1)</b>	<b>Proposed Maximum Offering Price Per Share</b>	<b>Proposed Maximum Aggregate Offering Price</b>	<b>Amount of Registration Fee</b>
Common Stock, par value \$0.001 per share	4,790,371 shares(2)	\$2.83 (3)	\$13,556,749.93	\$1,760.00
Common Stock, par value \$0.001 per share	940,000 shares(4)	\$14.00 (5)	\$13,160,000.00	\$1,709.00
Common Stock, par value \$0.001 per share	5,600,000 shares(6)	\$14.00 (5)	\$78,400,000.00	\$10,177.00

- (1) Pursuant to Rule 416(a) and Rule 416(b) under the Securities Act of 1933, as amended (the “Securities Act”), this Registration Statement shall also cover additional shares of the Registrant’s Common Stock, par value \$0.001 per share (“Common Stock”), which become issuable under the Frequency Therapeutics, Inc. 2014 Stock Incentive Plan, as amended (the “Existing Plan”), the Frequency Therapeutics, Inc. 2019 Incentive Award Plan (the “2019 Plan”), and the Frequency Therapeutics, Inc. 2019 Employee Stock Purchase Plan (the “ESPP”) by reason of any stock split, stock dividend, recapitalization, or other similar transaction.
- (2) Represents 4,790,371 shares of Common Stock subject to outstanding stock options under the Existing Plan as of October 7, 2019. To the extent stock options outstanding under the Existing Plan are forfeited, lapse unexercised, or are settled in cash, the shares of Common Stock subject to the stock options will be available for future issuance under the 2019 Plan.
- (3) Estimated in accordance with Rule 457(h) of the Securities Act solely for the purpose of calculating the registration fee on the basis of the weighted average exercise price of \$2.83 per share for outstanding stock options granted under the Existing Plan.
- (4) Represents 940,000 shares of Common Stock available for future issuance under the ESPP, which number consists of (a) 315,000 shares of Common Stock initially available for issuance under the ESPP and (b) an additional 625,000 shares of Common Stock that may become issuable under the ESPP pursuant to its terms.
- (5) With respect to shares available for future issuance, estimated in accordance with Rule 457(c) and 457(h) of the Securities Act for purposes of calculating the registration fee, the Proposed Maximum Offering Price Per Share is \$14.00, which is the initial public offering price set forth on the cover page of the Registrant’s prospectus dated October 2, 2019, relating to its initial public offering of Common Stock.
- (6) Represents 5,600,000 shares of Common Stock available for future issuance under the 2019 Plan, which number consists of (a) 3,100,000 shares of Common Stock initially available for issuance under the 2019 Plan and (b) an additional 2,500,000 shares of Common Stock that may become issuable under the 2019 Plan pursuant to its terms.

**PART I**

**INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS**

The information called for in Part I of Form S-8 is not being filed with or included in this Registration Statement (by incorporation by reference or otherwise) in accordance with the rules and regulations of the Securities and Exchange Commission (the "Commission").

**PART II**

**INFORMATION REQUIRED IN THE REGISTRATION STATEMENT**

**Item 3. Incorporation of Documents by Reference.**

The following documents, which have been filed with the Commission by Frequency Therapeutics, Inc. (the "Registrant"), pursuant to the Securities Act and the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as applicable, are hereby incorporated by reference in, and shall be deemed to be a part of, this Registration Statement:

(a) the Registrant's prospectus filed with the Commission pursuant to [Rule 424\(b\)](#) promulgated under the Securities Act on October 3, 2019, in connection with the registration statement on [Form S-1](#), as amended (Reg. No. 333-233652), in which there is set forth the audited financial statements for the Registrant's fiscal year ended December 31, 2018; and

(b) the description of the Registrant's Common Stock contained in the prospectus included in the Registrant's registration statement on [Form S-1](#), as amended (Reg. No. 333-233652), which description is incorporated by reference into the [Form 8-A](#) (File No. 001-39062) filed with the Commission on September 23, 2019, pursuant to the Exchange Act, and any amendment or report filed for the purpose of updating such description.

All documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act subsequent to the date of this Registration Statement and prior to the filing of a post-effective amendment to this Registration Statement which indicates that all securities offered hereby have been sold or which deregisters all such securities then remaining unsold, shall be deemed to be incorporated by reference herein and to be a part hereof from the date of filing of such documents.

Any statement contained in this Registration Statement, in an amendment hereto or in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained herein or in any subsequently filed amendment to this Registration Statement or in any document that also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement, except as to such specific section of such statements as set forth therein.

Under no circumstances shall any information furnished under Item 2.02 or 7.01 of Form 8-K be deemed incorporated herein by reference unless such Form 8-K expressly provides to the contrary.

**Item 4. Description of Securities.**

Not applicable.

**Item 5. Interests of Named Experts and Counsel.**

Not applicable.

**Item 6. Indemnification of Directors and Officers.**

Section 102 of the General Corporation Law of the State of Delaware permits a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit. The Registrant's certificate of incorporation provides that no director of the Registrant shall be personally liable to it or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability, except to the extent that the General Corporation Law of the State of Delaware prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty.

Section 145 of the General Corporation Law of the State of Delaware provides that a corporation has the power to indemnify a director, officer, employee, or agent of the corporation, or a person serving at the request of the corporation for another corporation, partnership, joint venture, trust or other enterprise in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he was or is a party or is threatened to be made a party to any threatened, ending or completed action, suit or proceeding by reason of such position, if such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

The Registrant's certificate of incorporation provides that the Registrant will indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding (other than an action by or in the right of it) by reason of the fact that he or she is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at the Registrant's request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (all such persons being referred to as an "Indemnitee"), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom, if such Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the Registrant's best interests, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful. The Registrant's certificate of incorporation provides that the Registrant will indemnify any Indemnitee who was or is a party to an action or suit by or in the right of the Registrant to procure a judgment in the Registrant's favor by reason of the fact that the Indemnitee is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at the Registrant's request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding, and any appeal therefrom, if the Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the Registrant's best interests, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the Registrant, unless a court determines that, despite such adjudication but in view of all of the circumstances, he or she is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that any Indemnitee has been successful, on the merits or otherwise, he or she will be indemnified by the Registrant against all expenses (including attorneys' fees) actually and reasonably incurred in connection therewith. Expenses must be advanced to an Indemnitee under certain circumstances.

The Registrant has entered into indemnification agreements with each of the Registrant's directors and officers. These indemnification agreements may require the Registrant, among other things, to indemnify its directors and officers for some expenses, including attorneys' fees, judgments, fines and settlement amounts

incurred by a director or officer in any action or proceeding arising out of his or her service as one of the Registrant's directors or officers, or any other company or enterprise to which the person provides services at the Registrant's request.

The Registrant maintains a general liability insurance policy that covers certain liabilities of directors and officers of the Registrant's corporation arising out of claims based on acts or omissions in their capacities as directors or officers.

**Item 7. Exemption from Registration Claimed.**

Not applicable.

**Item 8. Exhibits.**

<b>Exhibit Number</b>	<b>Description of Exhibit</b>
4.1	<a href="#">Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on October 7, 2019).</a>
4.2	<a href="#">Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K filed on October 7, 2019).</a>
4.3	<a href="#">Specimen Stock Certificate evidencing the shares of Common Stock (incorporated by reference to Exhibit 4.1 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (Reg. No. 333-233652) filed on September 23, 2019).</a>
5.1+	<a href="#">Opinion of Latham &amp; Watkins LLP.</a>
23.1+	<a href="#">Consent of RSM US LLP.</a>
23.2+	<a href="#">Consent of Latham &amp; Watkins LLP (included in Exhibit 5.1).</a>
24.1	<a href="#">Power of Attorney (included on signature page).</a>
99.1	<a href="#">Frequency Therapeutics, Inc. 2014 Stock Incentive Plan, as amended (incorporated by reference to Exhibit 10.1 to the Registrant's Registration Statement on Form S-1 (Reg. No. 333-233652) filed on September 6, 2019).</a>
99.2	<a href="#">Frequency Therapeutics, Inc. 2019 Incentive Award Plan (incorporated by reference to Exhibit 10.2 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (Reg. No. 333-233652) filed on September 23, 2019).</a>
99.3	<a href="#">Frequency Therapeutics, Inc. 2019 Employee Stock Purchase Plan (incorporated by reference to Exhibit 10.13 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (Reg. No. 333-233652) filed on September 23, 2019).</a>

+ Filed herewith

**Item 9. Undertakings.**

(a) The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the

aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective Registration Statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the Registration Statement;

*provided, however*, that paragraphs (a)(1)(i) and (a)(1)(ii) of this section do not apply if the Registration Statement is on Form S-8, and the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the Registration Statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof; and

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(h) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

**SIGNATURES**

Pursuant to the requirements of the Securities Act, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Woburn, Commonwealth of Massachusetts, on the 7<sup>th</sup> day of October, 2019.

**FREQUENCY THERAPEUTICS, INC.**

By: /s/ David L. Lucchino

David L. Lucchino

President and Chief Executive Officer

## SIGNATURES AND POWER OF ATTORNEY

We, the undersigned officers and directors of Frequency Therapeutics, Inc., hereby severally constitute and appoint David L. Lucchino and Richard Mitrano, and each of them singly (with full power to each of them to act alone), our true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them for him and in his name, place and stead, and in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement (or any other registration statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as full to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed by the following persons in the capacities held on the dates indicated.

Signature	Title	Date
<u>/s/ David L. Lucchino</u> David L. Lucchino	President, Chief Executive Officer and Director (principal executive officer)	October 7, 2019
<u>/s/ Richard Mitrano</u> Richard Mitrano	Vice President, Finance and Operations (principal financial and accounting officer)	October 7, 2019
<u>/s/ Marc A. Cohen</u> Marc A. Cohen	Executive Chairman and Director	October 7, 2019
<u>/s/ Timothy J. Barberich</u> Timothy J. Barberich	Director	October 7, 2019
<u>/s/ Michael Huang</u> Michael Huang	Director	October 7, 2019
<u>/s/ Robert S. Langer</u> Robert S. Langer, Sc.D.	Director	October 7, 2019
<u>/s/ Joel S. Marcus</u> Joel S. Marcus	Director	October 7, 2019

## LATHAM &amp; WATKINS LLP

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 Boston, Massachusetts 02116  
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## FIRM / AFFILIATE OFFICES

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London	Singapore
Los Angeles	Tokyo
Madrid	Washington, D.C.
Milan	

October 7, 2019

Frequency Therapeutics, Inc.  
 19 Presidential Way  
 Woburn, MA 01801

Re: Registration Statement on Form S-8; 11,330,371 shares of Frequency  
 Therapeutics, Inc. Common Stock, \$0.001 par value per share

Ladies and Gentlemen:

We have acted as special counsel to Frequency Therapeutics, Inc., a Delaware corporation (the “**Company**”), in connection with the proposed issuance by the Company of up to 11,330,371 shares of common stock of the Company, \$0.001 par value per share (the “**Shares**”) issuable under the Frequency Therapeutics, Inc. 2014 Stock Incentive Plan, as amended (the “**2014 Plan**”), the Frequency Therapeutics, Inc. 2019 Incentive Award Plan (the “**2019 Plan**”) and the Frequency Therapeutics, Inc. 2019 Employee Stock Purchase Plan (the “**2019 ESPP**” and, together with the 2014 Plan, and the 2019 Plan, the “**Plans**”). The Shares are included in a registration statement on Form S-8 under the Securities Act of 1933, as amended (the “**Act**”), filed with the Securities and Exchange Commission (the “**Commission**”) on October 7, 2019 (the “**Registration Statement**”). This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement or related prospectus, other than as expressly stated herein with respect to the issue of the Shares.

As such counsel, we have examined such matters of fact and questions of law as we have considered appropriate for purposes of this letter. With your consent, we have relied upon certificates and other assurances of officers of the Company and others as to factual matters without having independently verified such factual matters. We are opining herein as to the General Corporation Law of the State of Delaware and we express no opinion with respect to any other laws.

Subject to the foregoing and the other matters set forth herein, it is our opinion that, as of the date hereof, when the Shares shall have been duly registered on the books of the transfer agent and registrar therefor in the name or on behalf of the purchasers, and have been issued by the Company for legal consideration in excess of par value in the circumstances contemplated by the Plans, assuming in each case that the individual grants or awards under the Plans are duly authorized by all necessary corporate action and duly granted or awarded and exercised in

**LATHAM & WATKINS** LLP

accordance with the requirements of law and the Plans (and the agreements and awards duly adopted thereunder and in accordance therewith), the issue and sale of the Shares will have been duly authorized by all necessary corporate action of the Company, and the Shares will be validly issued, fully paid and nonassessable. In rendering the foregoing opinion, we have assumed that the Company will comply with all applicable notice requirements regarding uncertificated shares provided in the General Corporation Law of the State of Delaware.

This opinion is for your benefit in connection with the Registration Statement and may be relied upon by you and by persons entitled to rely upon it pursuant to the applicable provisions of the Act. We consent to your filing this opinion as an exhibit to the Registration Statement. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ LATHAM & WATKINS LLP

**Consent of Independent Registered Public Accounting Firm**

We consent to the incorporation by reference in this Registration Statement on Form S-8 of Frequency Therapeutics, Inc. of our report dated July 18, 2019, except with respect to the matters discussed in Notes 20a, 20b and 20c, as to which the date is September 20, 2019, relating to the consolidated financial statements of Frequency Therapeutics, Inc. and its subsidiaries, appearing in the Registration Statement (No. 333-233652) on Form S-1, as amended and related prospectus of Frequency Therapeutics, Inc.

/s/ RSM US LLP

Boston, Massachusetts  
October 7, 2019